DOCUMENT RESUME

ED 047 127 | 24 | VT 012 489

AUTHOR	Campbell, Robert E.; And Others
TITLE	The Systems Approach: An Emerging Behavioral Model for Vocational Guidance. A Summary Report. Research and Development Series No. 45.
INSTITUTION	Ohio State Univ., Columbus. Center for Vocational and Technical Education.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C. Bureau of Research.
BUREAU NO	BR-7-0158
PUB DATE	Jan 71
GRANT	OEG-3-7-000158-2037
NOTE	33p.
AVAILABLE FROM	The Center for Vocational and Technical Education, The Ohio State University, 1900 Kenny Road, Columbus, Ohio 43210 (Limited number of complimentary copies)
EDRS PRICE	EDRS Price MF-$0.65 HC-$3.29
DESCRIPTORS	Behavioral Objectives, *Guidance Programs, Guidelines, *Models, *Occupational Guidance, Program Development, Program Evaluation, *Program Improvement, *Senior High Schools, Systems Approach

ABSTRACT

The primary purpose of this project was to develop a procedural model for improving vocational guidance programs in senior high schools. Using a systems approach, the model: (1) emphasizes student behavioral objectives, (2) gives alternative methods for accomplishing these objectives, (3) provides program evaluation strategies, (4) incorporates guidelines for program change adjustments, and (5) can be operationally demonstrated in pilot locations and subsequently replicated in other locations. The 10 procedural phases of the model were developed over a 2-year period in cooperation with a comprehensive high school, although the basic model is flexible enough for use at many levels such as the state guidance system or local school systems. Each phase is independent, allowing the adoption of the combination best suited to individual needs. A revised model will be published following extensive field testing. (BH)

ED047127

(C1)

the systems approach:

An Emerging Behavioral Model for Vocational Guidance

a summary report

Research and Development
Series No. 45

THE CENTER FOR VOCATIONAL AND TECHNICAL EDUCATION
THE OHIO STATE UNIVERSITY

VT012489

The Center for Vocational and Technical Education has been established as an independent unit on The Ohio State University campus with a grant from the Division of Comprehensive and Vocational Education Research, U.S. Office of Education. It serves a catalytic role in establishing consortia to focus on relevant problems in vocational and technical education. The Center is comprehensive in its commitment and responsibility, multidisciplinary in its approach, and interinstitutional in its program.

The major objectives of The Center follow:

1. To provide continuing reappraisal of the role and function of vocational and technical education in our democratic society;

2. To stimulate and strengthen state, regional, and national programs of applied research and development directed toward the solution of pressing problems in vocational and technical education;

3. To encourage the development of research to improve vocational and technical education in institutions of higher education and other appropriate settings;

4. To conduct research studies directed toward the development of new knowledge and new applications of existing knowledge in vocational and technical education;

5. To upgrade vocational education leadership (state supervisors, teacher educators, research specialists, and others) through an advanced study and in-service education program;

6. To provide a national information retrieval, storage, and dissemination system for vocational and technical education linked with the Educational Resources Information Center located in the U.S. Office of Education.

ED047127

RESEARCH AND DEVELOPMENT
SERIES NO. 45

THE SYSTEMS APPROACH: AN EMERGING BEHAVIORAL MODEL FOR VOCATIONAL GUIDANCE

A SUMMARY REPORT

ROBERT E. CAMPBELL

EDWARD P. DWORKIN

DOROTHY P. JACKSON

KENNETH E. HOELTZEL

GEORGE E. PARSONS

DAVID W. LACEY

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

The Center for Vocational and Technical Education
The Ohio State University
1900 Kenny Road
Columbus, Ohio 43210

JANUARY 1971

INTERIM REPORT

PROJECT NO. 7-0158

GRANT NO. OEG-3-7-000158-2037

The material in this publication was prepared pursuant to a grant with the Office of Education, U.S. Department of Health, Education and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their judgment in professional and technical matters. Points of view or opinions do not, therefore, necessarily represent official Office of Education position or policy.

This publication has been prepared for distribution to selected agencies and individuals on a complimentary basis as permitted by funding under the terms of the federal grant. Additional copies have been produced from local funds for distribution on a cost recovery basis to assure wider dissemination of the document.

U.S. DEPARTMENT OF
HEALTH, EDUCATION AND WELFARE

Office of Education
Bureau of Research

PREFACE

Increasing demands for assisting youth in career development have placed new challenges on the field of vocational guidance. New approaches are needed to meet these challenges. *The Systems Approach: An Emerging Behavioral Model for Vocational Guidance* has been developed by The Center to assist schools in providing improved career development services to youth. The model has been designed to help the schools reconceptualize program planning. In addition to offering a procedural model, it provides a wealth of valuable resources for implementing programs. This summary report gives an overview of the model and a resume of the contents of the procedural monograph to be published later.

We appreciate the active contributions of the many participants in this study who represented all facets of the community, e.g., public schools, state education departments, industry, and students and their parents. Our special thanks go to the Project Advisory Committee and the consultants identified elsewhere in this report. They freely gave of their time to make the model a viable approach. Acknowledgment is due to the project staff headed by Robert E. Campbell, The Center; Edward P. Dworkin (now at the University of Michigan); Dorothy P. Jackson, Psychology Department, The Ohio State University; Kenneth E. Hoeltzel (now at the State University of New York at Plattsburgh); George E. Parsons, The Center; and David W. Lacey (now at the Rochester Institute of Technology); and to Edward J. Morrison, Research Coordinator, The Center.

We hope you find this report useful. We solicit your comments for further improvement of the model.

Robert E. Taylor
Director
The Center for Vocational
and Technical Education

ABSTRACT

The primary purpose of this project was to develop a procedural model for improving vocational guidance programs in senior high schools. The need for a model grew out of a national survey of vocational guidance conducted in 1968 by The Center which concluded "if guidance programs are to be effective they must be systematically designed to achieve stated but limited objectives selected from a much larger set of possible objectives."

The model, based on a systems approach, (a) emphasizes student behavioral objectives, (b) gives alternative methods for accomplishing these objectives, (c) provides program evaluation strategies, (d) incorporates guidelines for program change adjustments, and (e) can be operationally demonstrated in pilot locations and subsequently replicated in other locations. The model consists of 10 procedural phases, each phase reflecting an aspect of the systems approach (such as defining student behavioral objectives, generating vocational guidance methods, and implementing and evaluating the program).

The model was developed over a two year period in cooperation with a comprehensive senior high school. The project team included staff of The Center, consultants, an advisory committee, and representatives from the public school system in which the model was being developed. The project team embraced a wide range of expertise, e.g., guidance counselors, school administrators, job placement specialists, and students.

Although described here in a high school context, the model has been designed for flexible use at many levels such as the state guidance system, the local school system, and/or the county or area school system. The basic model is not restricted to vocational guidance and has utility for other aspects of the educational system. All 10 phases do not have to be adopted as a total package; each phase is independent and can be adopted in accordance with individual needs.

Since the model has not been field tested, the model described in this report is viewed an interim version. A revised model will be published following extensive field testing during the next two years.

CONTENTS

PREFACE iii

ABSTRACT v

INTRODUCTION 3

SUMMARY OF PART ONE: PROCEDURAL GUIDELINES FOR A SYSTEMS MODEL 7

SUMMARY OF PART TWO: A SIMULATED ILLUSTRATION OF A SYSTEMS MODEL 21

APPENDICES 23

REFERENCES 25

CONSULTANTS 27

THE SYSTEMS APPROACH:
AN EMERGING BEHAVIORAL MODEL
FOR VOCATIONAL GUIDANCE

A SUMMARY REPORT

INTRODUCTION

Vocational guidance programs need a systematic method for improving effectiveness and achieving goals. *The Systems Approach: An Emerging Behavioral Model for Vocational Guidance* was developed to answer that problem. The model adapts the systems approach so successfully used by industry to the field of vocational guidance.

The present report summarizes a procedural monograph which outlines a systems approach for designing guidance programs, reviews innovative guidance methods, and recommends areas of further research. An interim version of the procedural monograph will be available for dissemination by Spring of 1971. The monograph will be revised following extensive field testing during the next two years. Copies of the interim procedural monograph can be obtained by writing to the Publications Director, The Center for Vocational and Technical Education.

Systems methodology is not new. It has been described under several rubrics (systems analysis, man-machine systems, systems engineering, systems management, and operations research) in a variety of fields including business management, engineering, applied physics, military training, environmental planning, and aerospace research and development.

The systems approach can be defined as the selection of elements, relationships, and procedures to achieve a specific purpose (Hare, 1967). Non-educational examples include roadmaps (to reach a specific destination), office procedures (to communicate information), and personnel and equipment combinations to achieve a defense mission or to assemble a product for a corporation.

The primary advantage of using "systems" is increasing the probability that a given goal will be achieved. The entire approach is target oriented. Systems models show relationships and flow from start to finish and facilitate the management and monitoring of a program. Problems and impediments to achieving the goal can be spotted, modifications installed, resources shifted, and deadlines adjusted. The systems approach identifies alternative methods for achieving a goal, creates a searching attitude, insures "backup" plans if the primary plan breaks down, and has procedures for determining the success of the program built into the system. Through trial installation, monitoring, and feedback, a program is continuously assessed to determine the degree to which it is achieving its initial goal.

WHY THE MODEL WAS DEVELOPED

The systems model for vocational guidance described here resulted from a nationwide survey (of teachers, principals, counselors, parents, and students from 353 secondary schools representing 48 states) concerning the present status and future needs of vocational guidance (Campbell, 1968).

The survey showed that a stumbling block in guidance program success is the mismatch between requirements and resources. Far more guidance functions are expected than guidance staffs can possibly deliver without adding considerably to their resources and methods. Worse, the situation seems likely to continue. A government committee estimated that only one-half the number of people needed in guidance will be available by 1975 (people with master's degrees in counseling and guidance). The conclusion seems inescapable: if guidance programs are to be effective (meeting needs with resources) they must be systematically designed to achieve stated but limited objectives selected from a much larger set of possible objectives. Methods for achieving these objectives must be unrestricted and not bound to limitations of the past. They must be designed to accomplish their purpose with efficiency. The task appears to be feasible for most school or other operating units through the general methods developed for systems analysis and design.

HOW THE MODEL WAS DEVELOPED

The systems model outlined here grew out of a two-year guidance project in an inner-city school where at least 80 percent of the senior high students were non-college bound. The school was a comprehensive institution offering both general academic and vocational programs with a population of 1400 students grades 10 through 12, of which 30 percent were black. The project staff worked closely with staff, students, and administration to observe problems and to build what eventually became an ideal structure for a systems model for vocational guidance. Although the pilot high school provided a valuable working base (the site represented a school district including a senior high school and feeder junior high schools) it did not provide a thorough field test of the model. This is being planned for another geographical location at a future date.

As the idea for the systems model got under way, project consultants representing a variety of specialities and perspectives were called upon to develop the model. They included persons from the community and school such as students, teachers, principals, school board officials, industrialists, and counselor educators; and representatives of the state employment service and the state departments of guidance and vocational education. Each

phase of the project had a task force of six to 12 members selected for their expertise. The task forces developed separate components of the model.

Schools differ greatly and no standard can be expected to apply to all. The systems model was designed so that schools may select those components of the model which will be of most immediate help.

USE OF THE MODEL

To insure flexible use of the model and to allow its use by many groups the authors have included procedural guidelines and have provided an atlas of resources. The systems model has applicability at many levels such as the state guidance system, the local school system, and/or the county or area school system. The basic model is not restricted to vocational guidance and has utility for other aspects of the educational system, e.g., curriculum, and administration.

The procedural monograph includes many useful resources to facilitate using the model. For example, Appendix B of the monograph contains an annotated bibliography of vocational guidance methods which are cross-indexed by method clusters and behavioral objectives. Appendix C includes a national survey of state evaluation programs for guidance. Included are studies which have not been previously published as well as others which represent research-in-progress.

Step-by-step outlines have been developed for both macro and micro aspects of the model. The outlines are intended as guides for program planners and in most cases can be modified as dictated by circumstances and the needs of the local situation.

OVERVIEW OF THE MODEL

Applying systems methodology for vocational guidance programming necessitates the utilization of four basic activities or components: 1) specifying program objectives, 2) generating alternative methods, 3) designing program evaluation, and 4) implementing planned change. These four components provided a foundation for developing a 10-phase procedural model. The 10 phases are outlined below:

Phase I - Context Evaluation

Phase II - Assigning Program Goal Priorities

Phase III - The Translation of Goals to Student Behavioral Objectives

Phase IV - Input Evaluation: Method Selection

Phase V - Input Evaluation: Selection of Techniques

Phase VI - Diffusion: Trial Implementation

Phase VII - Process Evaluation

Phase VIII - Product Evaluation

Phase IX - Adoption

Phase X - Recycling

A detailed description of the four components of the Systems Approach and the 10-phase model can be found in the procedural monograph. A resume of the procedural monograph is presented in the next four sections of this summary report as follows:

The first section deals with the five chapters making up Part One of the monograph. It outlines the rationale, development, and use of the model and describes the application of the four basic components of the Systems Approach to vocational guidance. The second section briefly tells how Part Two of the monograph illustrates the use of the 10-phase model in a simulated senior high school setting. The third section describes the monograph appendices and the fourth presents the complete list of references for the monograph.

SUMMARY OF PART ONE:
PROCEDURAL GUIDELINES FOR A SYSTEMS MODEL

INTRODUCTION

Chapter I of the procedural monograph describes a research project entitled "Operation Guidance" initiated by The Center for Vocational and Technical Education in 1968. Operation Guidance stemmed from a felt national need to improve the effectiveness of vocational guidance by proposing innovative redirection. The chapter discusses the statement of the project problem, the purpose and objectives of the project, the systems approach, methodology of the project, the overall plan of the monograph, and the use of the model.

DEVELOPING STUDENT BEHAVIORAL OBJECTIVES FOR VOCATIONAL GUIDANCE

Objectives properly written leave no doubt as to what is to be expected. A major problem in guidance today is haziness about what is to be accomplished. People have been led to believe guidance is a cure-all. Much of the public sees guidance and education as panaceas for social ills, sex problems, student protest, unemployment, and even civil rights. Specifying objectives can alleviate this dilemma by communicating the parameters and naming the boundaries of the field.

The second chapter of the monograph provides procedural guidelines for develcping student behavioral objectives for vocational guidance. A behavioral objective is a statement which describes an observable kind of useful activity which successful students will be capable of performing at the conclusion of a particular learning unit. The objective is stated in terms of a student's expected performance (an observable activity displayed by a learner). The four basic elements and criteria of behavioral objectives are: 1) expected student performance, 2) content of the learning to be achieved, 3) evaluative criteria to assess the performance, and 4) the student's opportunity to demonstrate the behavior.

Behavioral objectives differ from program goals in several aspects. Goals are statements of functional direction in that they generally say what is expected or intended. Ryan, 1969,

defines goals as "a collection of words or symbols describing general intentions." In vocational guidance, goal statements are usually fairly global such as "To help students become familiar with themselves and the world of work," or "To provide individual and small group counseling." In most instances program goals in vocational guidance are written in the form of program services, e.g., group counseling, job placement, occupational information, and testing. Program goals differ from behavioral objectives in the degree of specificity. Objectives also provide a statement of functional direction, but define the direction more specifically in terms of changed student behavior or performance.

ADVANTAGES OF BEHAVIORAL OBJECTIVES

The value of behavioral objectives has been demonstrated in many ways. Some of the major advantages are listed as follows:

Program Efficiency: Very few school programs have unlimited time and resources to tackle every conceivable learning opportunity for the student. Programs must set some limits for what they can realistically hope to achieve within the resources of their school and community. Guidelines are needed for formulating realistic objectives for a program. The problem is one of conceptualizing program priorities which are realistically achievable by the school.

Clarity of Communication: A major advantage of defining behavioral objectives is clarity of communication. Statements of objectives, when properly written leave no doubt as to what is to be expected. General goals and mission statements are often so general that the collective publics have been erroneously led to believe that guidance could deliver much more than could reasonably be expected. Explicit communication is beneficial to all.

Ease of Specifying Vocational Guidance Methods: Another advantage of having concrete behavioral objectives is that guidance methods can be generated from objectives. The term methods is used broadly to include the entire spectrum of procedures and techniques to accomplish stated objectives, e.g., individual counseling, testing, career days, and job placement. One can more clearly and efficiently specify the range of methods needed to achieve each objective.

Assessment of Student Performance: It is essential both for the student and the school to have some barometer of the student's progress for a given subject matter area. For classroom subjects such as mathematics, graded exercises are given to assess the student's readiness for progressing to the next unit in a sequence of courses to achieve some math performance criterion. The same reasoning should apply to vocational development through

vocational guidance. A well conceptualized set of behavioral objectives will provide a progressive series of performance targets for students.

Program Monitoring: Behavioral objectives can also serve as a framework for determining the effectiveness of a vocational guidance program. The program administrator can monitor the impact of the program as he assesses the degree to which students achieve the objectives. By observing student performance, an administrator can identify obstacles to orderly vocational development and methodological weaknesses in the program.

BEHAVIORAL OBJECTIVES AS THE HEART OF THE PROGRAM

Behavioral objectives represent the heart of the vocational guidance program. In all probability more objectives will be developed than can be realized and the task centers on selectivity. Caution is herein expressed that selecting objectives should not be random but systematic. If such a procedure is followed, these objectives become the backbone of the vocational guidance program. Variables to be considered in selecting behavioral objectives are:

- physical facilities and personnel resources
- characteristics of the student population
- amount of flexibility desired in the program
- time constraints
- characteristics of the existing school program
- budget
- in view of staff and students what can realistically be expected?

HOW BEHAVIORAL OBJECTIVES ARE DEVELOPED

Developing student behavioral objectives involves five basic steps: identifying vocational guidance program goals; translating program goals into student behavioral objectives; selecting and conceptualizing behavioral objectives; developing specific behavioral objectives; and formulating evaluative criteria for behavioral objectives.

An example of a vocational guidance goal and behavioral objectives derived from it is as follows:

Goal: "To provide students with the opportunity to explore a wide range of occupations."

Behavioral objectives:

1. The student can describe (a) broad occupational families, (b) specific occupations and career patterns relevant to his preferences, and (c) major resources for acquiring knowledge of occupations and training.

2. The student has examined life styles associated with occupations.

3. The student has compiled a list of his tentative occupational preferences for explorations.

4. The student has completed an exploratory short (mini) course in at least three vocational areas (e.g., distributive education, auto mechanics, and food service).

Further examples of behavioral objectives can be found in Appendix A of the procedural monograph.

METHODS AND TECHNIQUES OF VOCATIONAL GUIDANCE

The third chapter of the monograph discusses the methods and techniques for achieving vocational guidance student behavioral objectives. The introductory section describes the role of methods and techniques in a vocational guidance systems model; furnishes a statement and schematization of relatedness of methods and techniques to student behavioral objectives; and presents a general description of methods terminology, the search for methods and techniques, and a brief statement of the organization of methods and techniques presented more fully in an appendix of the monograph.

The second section illustrates the relationship and organization of methods and techniques to vocational guidance objectives, while a third section describes the procedures devised for collecting, selecting, and operationalizing methods and techniques for developmental vocational guidance. A procedure for developing criteria specifications for the selection of methods is also presented.

DISTINGUISHING CHARACTERISTICS OF METHODS AND TECHNIQUES

A method is institutionally centered and is assumed to be an administrative function, e.g., group guidance, program modification,

testing, and occupational information. In the systems model presented here each method is the broader compilation of specific means or techniques for accomplishing guidance tasks. Guidance personnel function through application of a method to aid the student by the specific techniques they make available to him. Technique is defined as a specific means or relationship that is adopted by an institutional agent to facilitate learning for a defined body of participants in a specific situation. "Institutional agents" would be the guidance staff or the faculty. The "participants" would be the clients or students. The "specific situation" in the systems model refers to the educational environment. Techniques refer to the means of obtaining the client's involvement in a learning situation, e.g., writing autobiographies, reading pamphlets and books, and visiting and talking to workers. Therefore, techniques are specific means to achievement within a method, whereas methods are broader administrative approaches and functions.

ROLE OF METHODS AND TECHNIQUES RELATIVE TO BEHAVIORAL OBJECTIVES

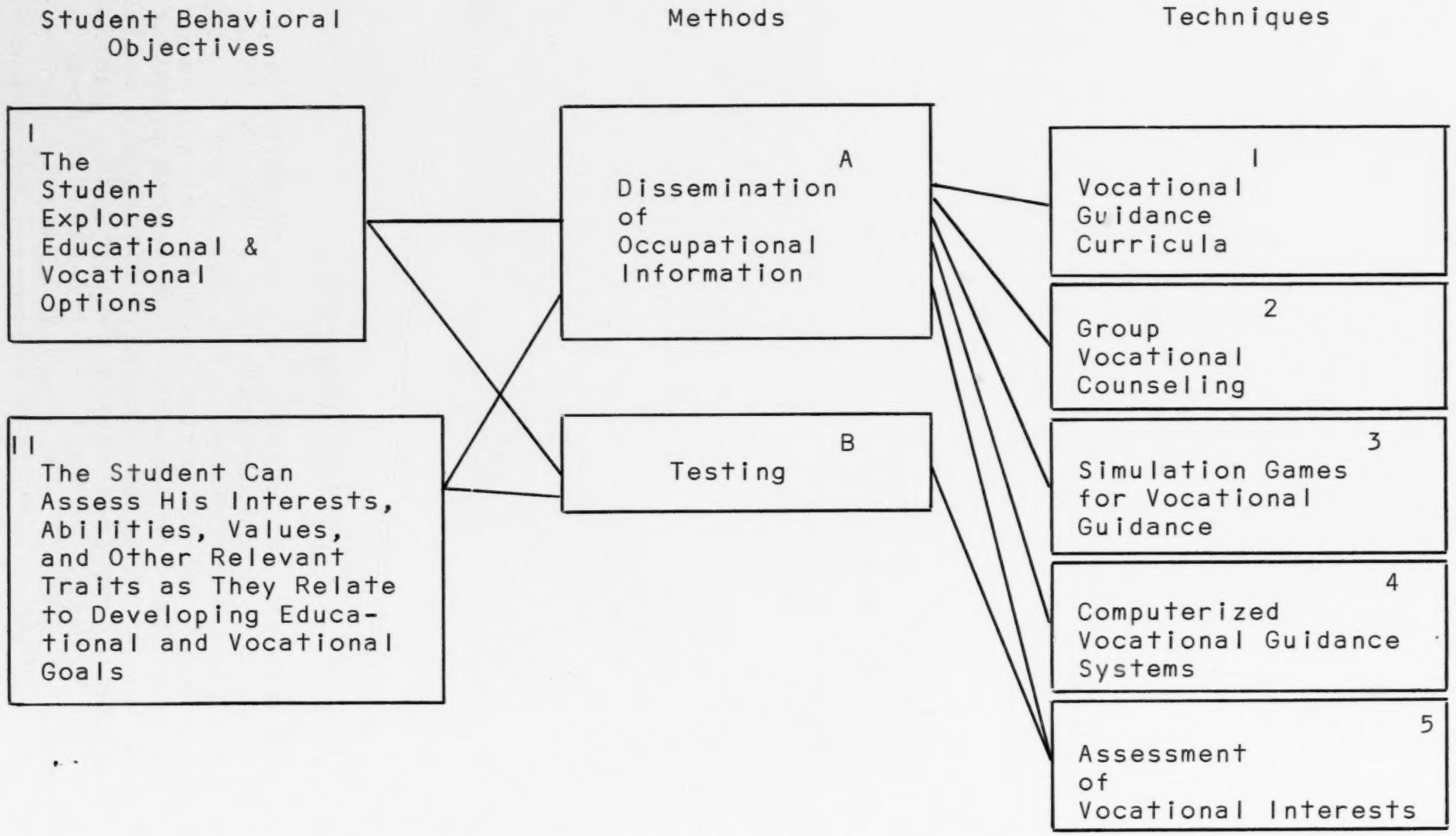
Methods and techniques generated by the guidance staff and used by the individual should enable him to attain needed levels of vocational development. Since many of the techniques currently available serve a dual purpose (i.e., as a means of implementing vocational guidance services and as a means of promoting vocational development in individuals), methods are seldom focused on any one behavioral objective. If techniques are means to achieve an end (students' behavioral objectives), many different means can serve that purpose. Further, there are many objectives that can be met by application of specific methods and techniques. Hence there is considerable overlap in the usefulness and the application of any particular method or technique. Figure 1 depicts the relationship of methods and techniques to behavioral objectives.

RANGE, SCOPE, AND SOURCE OF SELECTED GUIDANCE METHODS AND TECHNIQUES

Current guidance literature was searched to identify methods and techniques that are innovative and effective in achieving vocational guidance objectives. The search for methods and techniques was limited to the senior high school age range with emphasis on vocational development. The search procedure was varied and covered a wide range of sources. Literature culled included Educational Resources Information Center (ERIC) publications; *Personnel and Guidance Journal*, *Vocational Guidance Quarterly*, *School Counselor*, *American Vocational Journal*, *American Educational Research Journal*, *Psychology Abstracts*, *Education Index*, the

FIGURE I

SCHEMATIC RELATIONSHIP OF TWO STUDENT BEHAVIORAL OBJECTIVES TO METHODS AND TO TECHNIQUES



departments of education and psychology in universities and colleges, government and private agencies, dissertation abstracts, and articles and brochures printed by profit and nonprofit institutions. Methods were identified from newsletters published by professional associations, state departments of education, counseling centers, and public and private school systems. These sources generated approximately 2,000 references. Appendix B of the monograph includes those abstracts and citations for the vocational guidance systems whose methods and techniques are innovative and developmental in scope. It follows a four-part organization: 1) a methods and techniques index, 2) a student behavioral objective index, 3) an annotated alphabetical listing of abstracts, and 4) a supplementary listing of additional references.

COLLECTION, SELECTION OF METHODS

Methods and techniques must contain specific information if they are to be useful, effective, efficient, appropriate, and of benefit to both practitioners and users. The specifications for the selection of methods and techniques fitting the above qualifications are (statements of):

a. purpose

b. use or operation

c. content

d. appropriateness

e. procedures and process involved

f. demonstrable and expected behavioral changes

g. evaluation.

Methods and techniques of vocational guidance programs should include these seven specifications and others stated in the monograph's fifth chapter.

PROGRAM EVALUATION STRATEGIES

In the past few years, evaluation has been given strong emphasis in the field of education. Entire issues of the *National Society for the Study of Education Yearbook* (Part II, 1969), *The Review of Educational Research* (April, 1970), and the *Urban Review* (1969) have been devoted to educational evaluation. A bibliography in the latter publication (Christiansen, 1969) listed

over 175 recent articles, monographs, reports, case studies and books in the area of educational evaluation.

Guidance, too, has been experiencing the evaluation emphasis. During the late 1950's and early 1960's, guidance was growing by leaps and bounds. Local programs were being expanded, literature was flooding the field, and training programs were thriving. Most guidance people were too busy during that period of time to think about evaluating the actual worth of the program.

Now, however, various publics want to know whether guidance is of any value. While in some localities, the guidance movement is still on the upswing, other communities are taking a long look to determine whether the results are actually worth the time and money being spent. Proposed Department of Labor legislation would take much of the counseling and guidance activity out of the schools and place it in offices of the U.S. Employment Service (Riccio, 1970). This has led many in the guidance profession to seek an objective tool by which to test the value of the existing program and discover weak areas which need attention.

When a school system decides upon an evaluation, it is time to lay out procedure. Models differ. Most include personnel, budget, recordkeeping, materials, and scheduling. In addition, evaluators must consider school philosophies, guidance program objectives, school and community settings, and attitudinal preparation for the entire staff.

The primary purpose of Chapter IV of the monograph is to suggest ways to formulate, execute, and implement a program evaluation for vocational guidance. Alternative evaluation models are described as well as basic definitions and an historical review of evaluation in guidance.

PURPOSES OF EVALUATION

Hollis and Hollis (1965), Stufflebeam (1969), and Wysong (1968) have listed some of the purposes of evaluation:

- To measure the efficiency of the guidance program and its services.
- To measure the effectiveness of the total guidance program or any part.
- To collate data into meaningful forms and make interpretations.
- To support efficient and effective parts of the program.

- To determine the extent the program is developmental from primary grades through college.
- To encourage favorable attitudes toward guidance by administration, staff and community.
- To clarify for the counselor what is being attempted.
- To scrutinize procedures. Do they meet needs?
- To discover new goals.
- To further understanding about the school's guidance activities and each person's role in reaching guidance objectives.
- To accumulate data as against "beliefs" or opinions. Data may be later used for research.
- To set the stage for more effective in-service training.
- To bring sound and useful information to the decision-maker.
- To assist administrators, counselors and teachers in guidance practices and techniques.
- To obtain, analyze and report findings to various publics concerning the objectives, activities and effects of the school guidance program.
- To acquaint educators with evaluation.

Overviews of five evaluation models (Wellman, 1967; Wysong, 1968; Hollis and Hollis, 1965; North Central Association, 1970; and Guba and Stufflebeam, 1968) are presented in the monograph. A detailed outline of Guba and Stufflebeam's CIPP evaluation model is given as a guide for evaluation. The CIPP model was selected since it is the most comprehensive of the available models. CIPP is an acronym for the four steps of the evaluation process: 1) content evaluation, 2) input evaluation, 3) process evaluation, and 4) product evaluation. Each evaluation stage provides information for a division stage. The following is a skeletal sketch of the process:

Context evaluation: Context evaluation defines the environment in which change is to occur, depicts unmet needs, and identifies the problems. It also provides evidence about the merits of programs thus assisting educators toward decisions they might have to make about guidance development and operation. Compiling information about community and school settings can be context evaluation.

Planning decisions: The next step after context evaluation is to review the findings and determine change. The model has now reached a decision step. Questions to be answered are: "Should program goals be changed? Should parts be added, deleted, or changed in the present program? What behaviors should students exhibit?"

Input evaluation: This is to determine how to utilize resources to meet goals. The end product is the analysis of alternative methods in carrying out our program goals.

Structuring decisions: If a variety of alternatives is available for changing a guidance program, the structuring decision will decide which method will be tried first and in what manner.

The structuring decision actually is a means to this end. It must include outcomes to be achieved, work to be performed, a description of resources and time requirements.

Process Evaluation: In the trial stage, process evaluation gives feedback. Questions include: "Should the present staff be retained? Should new procedures be instituted? Should additional resources be sought? Should the schedule be changed?" Process evaluation endeavors to detect problems in time, staff, budget, or design. Anticipated problems may be misunderstandings about purposes, lack of interest or enthusiasm, interpersonal problems among evaluators, schedule conflicts, weaknesses of materials, etc. Process evaluation improves the ongoing project, coordinates activities, and facilitates communication between interested persons.

Implementing decisions: This is a decision to determine attainments of objectives and whether to continue, terminate, recycle or revise the method under consideration. A decision to revise might include retraining the staff, purchasing new materials, changing the time schedule, modifying procedures or reassigning personnel. It would also be possible to start the method again without change. A decision to continue does not guarantee the method will be installed into the program but rather implies satisfactory progress and need of further analysis. A termination decision indicates the method is unsatisfactory. An alternative method may be selected, an implementing decision may be needed only once after a single evaluation or needed many times after constant evaluation (e.g., in the installing of a computer-based occupational information laboratory).

Product Evaluation: The objective of product evaluation is to measure and interpret attainments not only at the end of a project but as often as necessary during the project term (Guba

and Stufflebeam, 1968). During this phase, attainments are compared with the predetermined standards and objectives set after the context evaluation. In this instance attainments would be measured in terms of the impact of the innovation on students. A product evaluation could include interviewing students about a test and questioning the staff about scheduling and examining cost.

Recycling decisions: These are concerned with attainments at any point in a program as opposed solely to outcomes following a full cycle of a program (Guba and Stufflebeam, 1968). An evaluation committee might decide to continue the method in the program, install a method (if it is innovative), revise it, send it back, or terminate it. Termination could result in an alternative method.

STRUCTURES AND STRATEGIES FOR EDUCATIONAL CHANGE

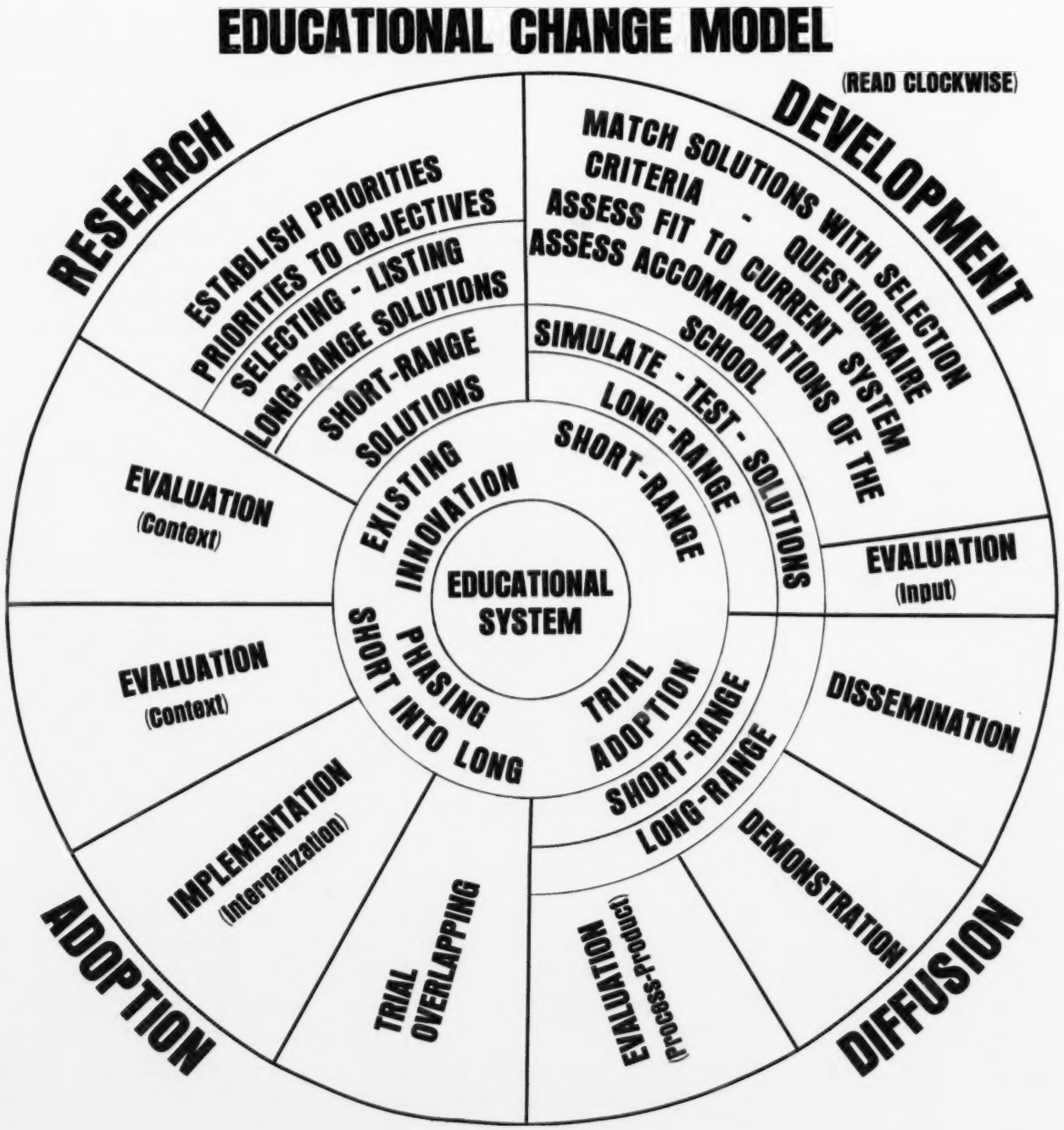
Change is a process. It is not a static. A fourth component of a systems model is the change process. It is the subject of Chapter V entitled "Structures and Strategies for Educational Change."

The steps in the process of effectuating educational change are outlined. The purpose of showing this process is to identify a series of interrelated phases between research, development, diffusion, and adoption in the change process in order to help counselors plan for change in schools. Figure 2 depicts the steps of the change process graphically.

The change process is concerned with the development of a bridge between an innovation and the eventual adoption of that innovation into the educational system. Planned change is based upon a deliberate and collaborative process involving change agents and those being changed (Fleming, 1966). Unplanned reactions, sometimes necessary for survival, create undue pressures reducing communication between the educator and those being educated and creating major lines of distrust. Education must discover the means of utilizing innovations in such a way as to insure a continuous process of orderly change and social renewal.

Chapter V is divided into four sections. The first section reviews the literature on planned change in education; section two identifies factors to be considered in influencing change in education; section three outlines a model for the effectuation of educational innovations; and section four discusses strategies for the implementation and adoption of educational innovations.

FIGURE 2


EDUCATIONAL CHANGE MODEL
(READ CLOCKWISE)
RESEARCH
DEVELOPMENT
DIFFUSION
ADOPTION
ESTABLISH PRIORITIES
PRIORITIES TO OBJECTIVES
SELECTING - LISTING
LONG-RANGE SOLUTIONS
SHORT-RANGE
SOLUTIONS
MATCH SOLUTIONS WITH SELECTION
CRITERIA - QUESTIONNAIRE
ASSESS FIT TO CURRENT SYSTEM
ASSESS ACCOMMODATIONS OF THE
SCHOOL
SIMULATE - TEST - SOLUTIONS
LONG-RANGE
SHORT-RANGE
EXISTING
INNOVATION
EDUCATIONAL
SYSTEM
PHASING
SHORT INTO LONG
TRIAL
ADOPTION
SHORT-RANGE
LONG-RANGE
EVALUATION
(Context)
EVALUATION
(Input)
DISSEMINATION
DEMONSTRATION
EVALUATION
(Process-Product)
TRIAL
OVERLAPPING
IMPLEMENTATION
(Internalization)
EVALUATION
(Context)

The section dealing with factors to be considered in influencing change points out that a number of factors have to be considered before an innovation can be implemented. Some of these include:

1. The role of evaluating alternative methods for solving problems in a program should be identified and one alternative should be named for trial installation.

2. Characteristics of an Innovation:

   Magnitude: How much of the total school will be affected by it?

   Complexity: How many other changes will it incur?

   Convenience: Does it require out-of-town visits and consultants or can it be developed locally?

   Flexibility: How rigidly must one follow the innovation to bring success?

   Distinctiveness: Is it new and different?

   Interaction with Other Programs: Does it require other programs for its success or can it stand alone?

   Readiness: Can it be applied immediately?

   Cost: Does cost preclude its use--what about additional future funding?

   Content: Some innovations requiring minimal change fail because the new method is adapted and altered to become a duplicate of an old method.

3. Characteristics of the Educational System:

   In bringing about change, consider equipment and materials, time required, formal rule (does the innovation require changing rules of the school?), and training (will training limit the number who can give the innovation?).

4. Personality Factors Related to Innovations:

   Students: Do they want the change or is it a waste of time?

   Community: Does the change cross tradition to bring repercussions?

Social Setting: Does the social setting permit it (forcing upper class techniques of learning in Model Cities may cause problems)?

Administration: What does the Central Office think of it? How will the superintendent who is for it, face a board that may be against it?

The concluding section of Chapter V discusses other change process models and reviews strategies for implementation and adoption. Other models include those suggested by Miller, 1966; Brickell, 1969; and Jung and Lippitt, 1966. A number of alternative strategies for implementing an innovation are suggested such as the pilot project, the demonstration project, the experimental substation, the change internal agents approach, the foreign legion approach, and the thing approach.

SUMMARY OF PART TWO:

A SIMULATED ILLUSTRATION OF A SYSTEMS MODEL

Chapters II through V of Part One provided description and procedural guidelines for the use of the systems approach in vocational guidance. Although each component of the approach was treated at length, Part One did not attempt to integrate the components as a total system. Part Two is an effort to depict the entire sequence of the systems model and to illustrate the use of the model in a simulated senior high school setting. An actual senior high school was used in the simulation. To show the entire sequence of phases of the systems model the basic components (behavioral objectives, methods, evaluation, planned change) are expanded into 10 sequential phases. These provide a step-by-step procedure for using the model.

APPENDICES

Five appendices are included to supplement Parts One and Two of the monograph. The appendices are intended as additional resources to implement the systems model.

Appendix A: Student behavioral objectives--An illustrative set for senior high school students is listed to demonstrate some of the previously discussed guidelines for developing behavioral objectives, e.g., identification of objectives from goals, sequencing of objectives, evaluative criteria, and the translation of research and theory to practice. The conceptual scheme for sequencing objectives was based primarily on the career development theories of Super and Tiedeman.

Appendix B: Annotated bibliography of vocational guidance methods--Approximately 300 methods are listed.

Appendix C: Evaluation programs--A letter was sent to 51 state departments (including the District of Columbia) which asked department officials "What evaluative procedures for school guidance programs do you conduct on a statewide or local basis?" Forty-four states responded. This is a synopsis of each state's procedures.

Appendix D:--A list of research and development centers, laboratories, and federal programs for counselors in the identification of current innovations and of ways to implement an innovation.

Appendix E: A glossary of terms.

REFERENCES

Brickell, H. M. "Appraising the Effects of Innovations in Local Schools," in *Educational Evaluation New Roles, New Means*. Ralph Tyler (ed.). Chicago, Illinois: University of Chicago Press, 1969.

Campbell, R. E.; Eggeman, D. F.; Gary, M. L.; Glover, R. W.; Makey, M. S.; Mehrotra, C. M.; and Nagely, D. M. *Vocational Guidance in Secondary Education, Results of a National Survey*. Columbus, Ohio: The Center for Vocational and Technical Education, 1900 Kenny Road, The Ohio State University, December, 1968.

Christiansen, D. "Evaluating Educational Programs." *Urban Review*, 3 (February, 1969), 27-31.

Fleming, W. G. "Rational Strategies for Educational Change," in *Emerging Strategies and Structures for Educational Change*. Toronto: The Ontario Institute for Studies in Education, 1966.

Guba, E., and Stufflebeam, D. "Evaluation: The Process of Stimulating, Aiding and Abetting Insightful Action." Address delivered at the Second National Symposium for Professors of Educational Research (Phi Delta Kappa) Boulder, Colorado, November 2, 1968.

Hare, Van C., Jr. *Systems Analysis: A Diagnostic Approach*. New York: Harcourt, Brace and World, Inc., 1967.

Hollis, J. W., and Hollis, L. V. *Organizing for Effective Guidance*. Chicago: Science Research Associates, 1965, pp. 415-440.

Houghton, H. W. *Certification Requirements for School Pupil Personnel Workers*. Washington, D.C.: Office of Education, U.S. Department of Health, Education and Welfare, 1966.

Jung, C., and Lippitt, R. "The Need for Planned Change in Research," in *Theory Into Practice*. Virgil Blanke (ed.). Vol. V., No. 1. Columbus, Ohio: The Ohio State University, College of Education, February, 1966.

Miller, R. I. "Commentary: The Research and Development Center Program in the United States," in *Emerging Strategies and Structures for Educational Change*. Toronto: The Ontario Institute for Studies in Education, 1966.

North Central Association Quarterly, 44, Winter, 1970.

Riccio, A. C. "The President's Message." *Counselor Education and Supervision*, IX, (Spring, 1970), 145-147.

Ryan, T. A. "Defining Behavioral Objectives." Paper prepared for AERA 1969 Presession, Defining Behavioral Objectives, Los Angeles, February 2, 1969.

Stufflebeam, D. "An Emergent Theory of Evaluation." Paper read at the Symposium on "The World of Evaluation Needs Reshaping." Los Angeles: AERA Convention, February, 1969.

Wellman, F. E. "A Conceptual Framework for the Derivation of Guidance Objectives and Outcome Criteria: Preliminary Statement," in *Research in Counseling*. John Whiteley (ed.). Columbus, Ohio: Charles E. Merrill, 1967, pp. 153-183.

Wysong, E. "Evaluative Secondary School Guidance Programs: The Development and Validation of Instruments." Unpublished dissertation, Columbus: The Ohio State University, 1968.

CONSULTANTS

ADVISORY COMMITTEE

Columbus (Ohio) Public School Representatives

Administration

Calvin Park
Norval Goss
Clayton Ferrell

Guidance Department

Thomas Schlueb
Sue Ellis
Martha Scott
Charles Meacham
Richard Boyd

Teaching Faculty

Nathalie Durrant
Wilton Greene

Student Body

Ann Beauman
Henry Hope
DeMaris Bell
Randy Courts
Sheri Coppes
Rod Young

Herbert D. Brum
Division of Vocational Education
State Department of Education
Columbus, Ohio

Frank C. Cleveland, Jr.
Mayor's Youth Coordinator
Columbus, Ohio

Ralph Gabele
State Employment Service
Columbus, Ohio

Richard C. Kelsey
Division of Guidance and Testing
State Department of Education
Columbus, Ohio

Harry E. Mayfield
United Steelworkers of America
Columbus, Ohio

Joseph A. Mihalka
State Employment Service
Columbus, Ohio

Merton B. Purvis
Plan for Progress
Columbus, Ohio

Michael D. Sheets
Vocational Planning Center
Columbus, Ohio

Bill Wheeler
National Alliance of Businessmen
Columbus, Ohio

James V. Wigtil
Department of Counseling and Guidance
The Ohio State University
Columbus, Ohio

ADDITIONAL CONSULTANTS

The following persons served as consultants for different phases of the project:

Carlton G. Antoine
Eastland Vocational School
Columbus, Ohio

James Ballantine
Sheridan Senior High School
Thornville, Ohio

Dick Beck
Columbus Public Schools
Columbus, Ohio

Claretta Boder
Eastland Vocational School
Groveport, Ohio

Frank Braun
Porter Junior High School
Cincinnati, Ohio

Counseling and Guidance
Department
Westerville High School
Westerville, Ohio

Shirley Crispi
West High School
Gary, Indiana

Sparkle Crowe
Pupil Personnel Service
Indianapolis, Indiana

Jay Dattle
East High School
Columbus, Ohio

David J. Fergus
Jones Junior High School
Upper Arlington Schools
Columbus, Ohio

Virginia M. Fischer
Porter Junior High School
Cincinnati Public Schools
Cincinnati, Ohio

Richard Green
State of Ohio
Division of Guidance and
Testing
Columbus, Ohio

Guidance Staff
John Marshall High School
Rochester, New York

Mike Leymaster
Columbus Technical Institute
Columbus, Ohio

Don H. McGee
The Ohio State University
Columbus, Ohio

Earl B. Moore
Southwestern City Schools
Grove City, Ohio

Edward J. Morrison
The Center for Vocational
and Technical Education
The Ohio State University
Columbus, Ohio

Jean Neilsen
South High School
Columbus, Ohio

James O'Hara
Denver Public Schools
Denver, Colorado

Jean Porter
Gahanna Lincoln High School
Gahanna, Ohio

Dick Reese
Heath High School
Heath, Ohio

Walter Roof
Big Walnut Local School
Sunbury, Ohio

T. Antoinette Ryan
University of Hawaii
Honolulu, Hawaii

Fred Schiff
Fairfield County Schools Office
Lancaster, Ohio

Joseph Schindler
Eastland Vocational School
Groveport, Ohio

Quentin P. Smith
West Side High School
Gary, Indiana

Sarah Smith
Jones Junior High School
Upper Arlington, Ohio

Daniel Stufflebeam
The Ohio State University
Columbus, Ohio

Donald E. Super
Teachers College
Columbia University
New York, New York

Don Tate
Columbus Public Schools
Columbus, Ohio